

5.0 MODELING RESULTS

The results of the modeling runs are shown in Table 5.1, compared with the thresholds presented in Sections 2.1 and 2.2.

TABLE 5.1
IMPACTS - SUMMARY
350 FEET BUFFER BETWEEN RECEPTORS AND SOURCES

| Hazardous Air Pollutant | Cancer Risk Threshold ($\mu\text{g}/\text{m}^3$) | | Chronic Exposure Threshold ($\mu\text{g}/\text{m}^3$) | Maximum Predicted Pollutant Impact ($\mu\text{g}/\text{m}^3$) |
|-------------------------|--|-------------------------------|---|---|
| | Maximum Exposure Scenario | Most Likely Exposure Scenario | | |
| Benzene | 0.23 | 1.28 | 71 | 1.8 |
| Ethylbenzene | --- | --- | 1000 | 0.3 |
| Formaldehyde | 0.18 | 0.82 | 3.6 | 0.00005 |
| N-hexane | --- | --- | 200 | 3.3 |
| Toluene | --- | --- | 400 | 4.3 |
| Xylenes | --- | --- | 300 | 3.6 |

These modeling results indicate that the pollutant concentrations for each of the six toxins will be below the chronic exposure thresholds, and therefore are expected to have no chronic health impacts. (Figures C.1 through C.6 in Attachment C show the predicted concentrations for the source-receptor configuration in Figure 3.1.) When the buffer between the sources and receptors is increased to 1,320 feet, the impacts decrease.

Regarding incremental cancer risk, the formaldehyde impacts (Figure C.3) are well below the cancer risk thresholds for both the maximum and most likely exposure scenarios. However, the maximum benzene impact (see Figure C.1) exceeds both the most likely exposure scenario and the maximum exposure scenario thresholds. The predicted concentration of $1.8 \mu\text{g}/\text{m}^3$ corresponds to a risk value of 6.4×10^{-6} for the maximum exposure scenario, and 1.4×10^{-6} for the most likely exposure scenario.

When the buffer between the receptors and the sources is increased from 350 feet to 1,320 feet (see the receptor-source configuration presented in Figure 3.2), the maximum benzene impact decreases to $0.72 \mu\text{g}/\text{m}^3$ (see Figure C.7), or an equivalent of 2.6×10^{-6} for the maximum exposure scenario (fewer than 3 additional people out of 1,000,000 developing cancer from the exposure to the Pinedale Anticline Project benzene emissions). For the most likely exposure scenario, the risk value is 5.6×10^{-7} which is below the significance threshold of 1×10^{-6} .